

## Web of Science

Search

Search Results

My Tools

Search History

Marked List

Full Text from Publisher

Look Up Full Text



Save to EndNote online

Add to Marked List

276 of 499

**n-(CdMgTe/CdTe)/(p-(CdTe/ZnCdTe/ZnTe)/p-GaAs heterostructure diode for photosensor applications**

By: Yahia, IS (Yahia, I. S.)<sup>[1,2]</sup>; AlFaify, S (AlFaify, S.)<sup>[2]</sup>; Abutalib, MM (Abutalib, M. M.)<sup>[3]</sup>; Chusnutdinov, S (Chusnutdinov, S.)<sup>[4]</sup>; Wojtowicz, T (Wojtowicz, T.)<sup>[4]</sup>; Karczewski, G (Karczewski, G.)<sup>[4]</sup>; Yakuphanoglu, F (Yakuphanoglu, F.)<sup>[5]</sup>; Al-Bassam, A (Al-Bassam, A.)<sup>[6]</sup>; El-Naggar, AM (El-Naggar, A. M.)<sup>[6]</sup>; El-Bashir, SM (El-Bashir, S. M.)<sup>[6,7]</sup>

[View ResearcherID and ORCID](#)**APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING**

Volume: 122 Issue: 5

Article Number: 491

DOI: 10.1007/s00339-016-0007-x

Published: MAY 2016

[View Journal Impact](#)**Abstract**

High quality n-(CdMgTe:l/n-CdTe: l)/(p-CdTe:N/p-ZnCdTe:N/p-ZnTe:N)/p-GaAs heterojunction diodes have been fabricated by molecular beam epitaxial growth. The illumination effect on the complex impedance and conductivity of heterostructure diode was investigated. The illumination intensities were taken up to the 200 mW/cm<sup>2</sup> with frequency range of 42 Hz to 1 MHz. The observed real and imaginary parts of the complex impedance were strongly dependent on the illumination frequency. The inverse relation was observed between the illumination intensity and the complex impedance. The relaxation mechanism of the diode was analyzed by the Cole-Cole plots. The radius of the Cole-Cole curve decreases with increasing illumination intensity. This suggests a mechanism of illumination dependent on the relaxation process. It is also found that the conductivity increases linearly with increasing the illumination intensity. We can conclude that the new design heterostructure diode in our work is a good candidate in photodetector and optoelectronic applications.

**Keywords****KeyWords Plus:** IMPEDANCE SPECTROSCOPY; SOLAR-CELL; FREQUENCY; FILMS**Author Information****Reprint Address:** Yahia, IS (reprint author)

+ Ain Shams Univ, Fac Educ, Dept Phys, Nanosci &amp; Semicond Labs, Cairo, Egypt.

**Reprint Address:** Yahia, IS (reprint author)

+ King Khalid Univ, Fac Sci, Dept Phys, POB 9004, Abha, Saudi Arabia.

**Addresses:**

+ [ 1 ] Ain Shams Univ, Fac Educ, Dept Phys, Nanosci &amp; Semicond Labs, Cairo, Egypt

+ [ 2 ] King Khalid Univ, Fac Sci, Dept Phys, POB 9004, Abha, Saudi Arabia

+ [ 3 ] King Abdulaziz Univ, Fac Sci, Dept Phys, AL Faisaliah Campus, Jeddah 21413, Saudi Arabia

+ [ 4 ] Polish Acad Sci, Inst Phys, Al Lotnikow 32-46, PL-02668 Warsaw, Poland

+ [ 5 ] Firat Univ, Fac Sci, Dept Phys, TR-23169 Elazig, Turkey

+ [ 6 ] King Saud Univ, Coll Sci, Dept Phys &amp; Astron, Res Chair Exploitat Renewable Energy Applicat Sau, POB 2455, Riyadh 11451, Saudi Arabia

+ [ 7 ] Benha Univ, Fac Sci, Dept Phys, Banha, Egypt

**E-mail Addresses:** [dr\\_isyahia@yahoo.com](mailto:dr_isyahia@yahoo.com)**Funding****Citation Network**

0 Times Cited

12 Cited References

[View Related Records](#) [Create Citation Alert](#)*(data from Web of Science Core Collection)***All Times Cited Counts**

0 in All Databases

0 in Web of Science Core Collection

0 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation Index

0 in SciELO Citation Index

**Usage Count**

Last 180 Days: 4

Since 2013: 22

[Learn more](#)**This record is from:****Web of Science Core Collection**  
- Science Citation Index Expanded**Suggest a correction**If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Funding Agency	Grant Number
King Saud University, Vice Deanship of Research Chairs	

[View funding text](#)

**Publisher**

SPRINGER, 233 SPRING ST, NEW YORK, NY 10013 USA

**Categories / Classification**

**Research Areas:** Materials Science; Physics

**Web of Science Categories:** Materials Science, Multidisciplinary; Physics, Applied

**Document Information**

**Document Type:** Article

**Language:** English

**Accession Number:** WOS:000375445700004

**ISSN:** 0947-8396

**eISSN:** 1432-0630

**Journal Information**

**Table of Contents:** [Current Contents Connect](#)

**Impact Factor:** [Journal Citation Reports](#)

**Other Information**

**IDS Number:** DL2EJ

**Cited References in Web of Science Core Collection:** 12

**Times Cited in Web of Science Core Collection:** 0